Technical Publications

Direction DOC2271864
Rev 3

Edison™ Datalogue™ Connect
DICOM CONFORMANCE STATEMENT

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REVISION HISTORY

Revision	Reason For Change	Author
1	Initial Version	Shilpi Prasad
2	Renaming product from Centricity360(C360) to Edison Datalogue Connect (EDLC) Document updated per DCS-Template-1.1	Batári Ferencné Julianna
3	Update for EDLC v1.1.0.0: - Patient's age is not used	Batári Ferencné Julianna

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CONFORMANCE STATEMENT OVERVIEW

Edison Datalogue Connect implements the necessary DICOM services to facilitate the fetching of images from external PACS systems and archiving to a cloud archive for image sharing between different healthcare providers and healthcare organizations. It enables the capabilities to archive images from any networked DICOM PACS or DICOM modality and to view these images in the Zero Foot Print (ZFP) DICOM viewer.

All Standard Storage SOP classes listed in **Error! Reference source not found.** can be received, stored, and transmitted.

The table below provides an overview of the additional non-storage SOP classes supported by the EDGE Device. The Query SOP classes support relational queries.

TABLE 0.1 NETWORK SERVICES

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Workflow Management (Non-Storage and Non-Display)		
Verification	Yes	Yes
Patient Root Query/Retrieve Model – FIND	Yes	No
Patient Root Query/Retrieve Model – MOVE	Yes	No
Study Root Query/Retrieve Model – FIND	Yes	No
Study Root Query/Retrieve Model – MOVE	Yes	No
Modality Worklist Information Model – FIND	Yes	No

Edison Datalogue Connect supports the following three types of DICOMDIR

- General Purpose CD-R Interchange (STD-GEN-CD)
- General Purpose Interchange on DVD-RAM Media (STD-GEN-DVD-RAM)
- General Purpose DVD with Compression Interchange (STD-GEN-DVD-JPEG/J2K)

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1. INTRODUCTION

1.1 OVERVIEW

This DICOM Conformance Statement is divided into Sections as described below:
Section 1 (INTRODUCTION), which describes the overall structure, intent, and references for this Conformance Statement

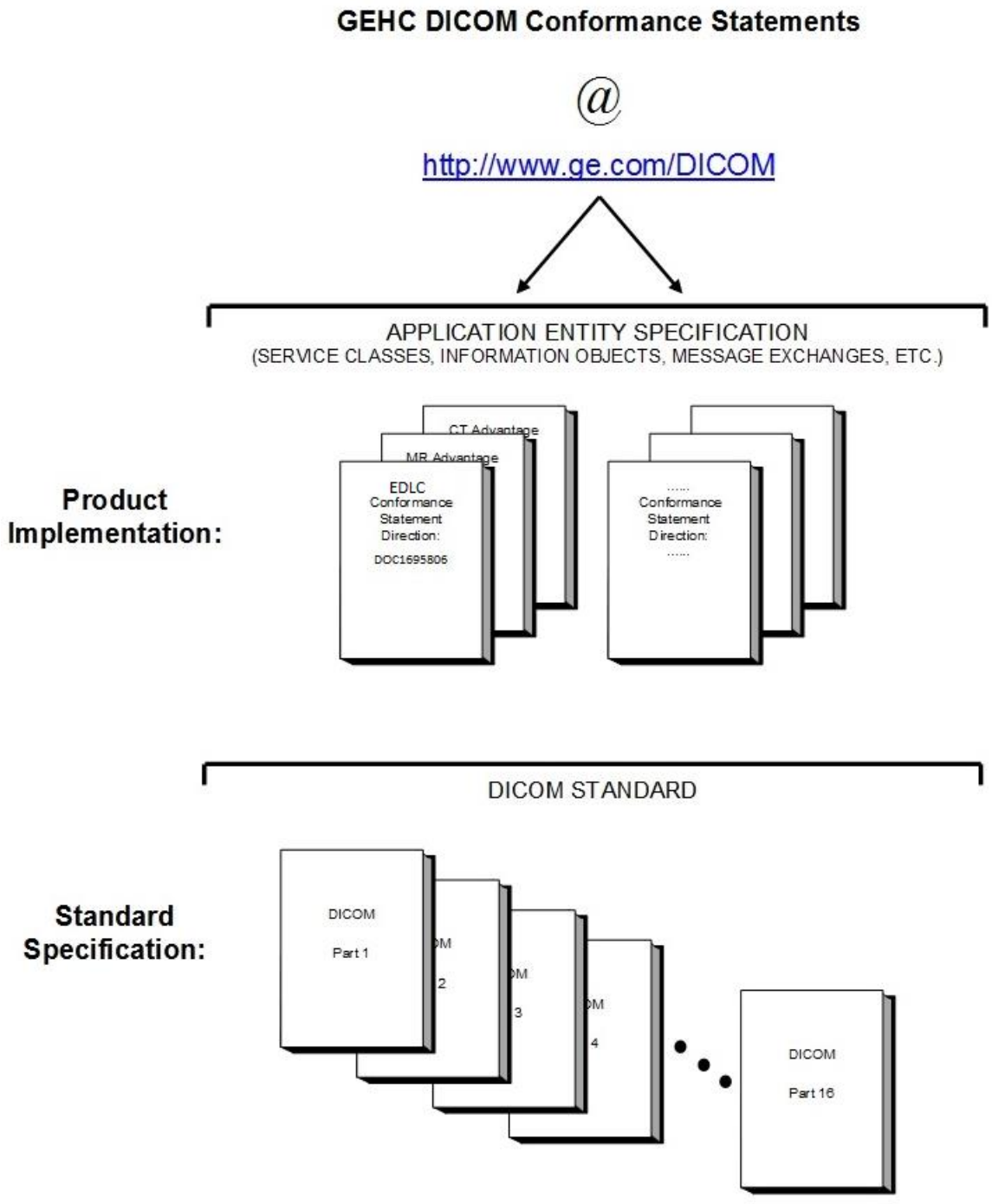
Section 2 (NETWORK CONFORMANCE SATEMENT), which specifies the GEHC equipment compliance to the DICOM requirements for the implementation of Networking features.

Section 3 (Media Storage Conformance Statement), which specifies the GEHC equipment compliance to the DICOM requirements for the implementation of Media Storage features.

Section 4 (DATA IMPORT INFORMATION OBJECT IMPLEMENTATION) which specifies the GEHC equipment compliance to DICOM requirements for the implementation of the Data Import Information Object.

1.2 OVERALL DICOM CONFORMANCE STATEMENT DOCUMENT STRUCTURE

The Documentation Structure of the GE Healthcare Conformance Statements and their relationship with the DICOM v3.0 Conformance Statements is shown in the Illustration below.



This document specifies the DICOM implementation. It is entitled:

Edison™ Datalogue™ Connect

Conformance Statement for DICOM
Direction DOC2271864

This DICOM Conformance Statement documents the DICOM Conformance Statement and Technical Specification required to interoperate with the GEHC network interface.
The GEHC Conformance Statement, contained in this document, also specifies the Lower Layer communications which it supports (e.g., TCP/IP). However, the Technical Specifications are defined in the DICOM Part 8 standard.
For more information regarding DICOM, copies of the Standard may be obtained on the Internet at http://medical.nema.org. Comments on the Standard may be addressed to:

DICOM Secretariat
NEMA
1300 N. 17th Street, Suite 1752
Rosslyn, VA 22209
USA
Phone: +1.703.841.3200

1.3 INTENDED AUDIENCE

The reader of this document is concerned with software design and/or system integration issues. It is assumed that the reader of this document is familiar with the DICOM Standard and with the terminology and concepts that are used in that Standard.

1.4 SCOPE AND FIELD OF APPLICATION

It is the intent of this document to provide an unambiguous specification for GEHC implementations. This specification, called a Conformance Statement, includes a DICOM Conformance Statement and is necessary to ensure proper processing and interpretation of GEHC medical data exchanged using DICOM. The GEHC Conformance Statements are available to the public.
The reader of this DICOM Conformance Statement should be aware that different GEHC devices are capable of using different Information Object Definitions. For example, a GEHC CT Scanner may send images using the CT Information Object, MR Information Object, Secondary Capture Object, etc.
Included in this DICOM Conformance Statement are the Module Definitions which define all data elements used by this GEHC implementation. If the user encounters unspecified private data elements while parsing a GEHC Data Set, the user is well advised to ignore those data elements (as per the DICOM standard). Unspecified private data element information is subject to change without notice. If, however, the device is acting as a "full fidelity storage device", it should retain and re-transmit all of the private data elements which are sent by GEHC devices.

1.4.1 IMPORTANT CONSIDERATIONS FOR THE READER

This DICOM Conformance Statement by itself is not sufficient to guarantee successful connectivity between the EDGE device and PACS equipment from other vendors. The following considerations should be made:
The integration of equipment from different vendors (including GE Healthcare) goes beyond the scope of the DICOM 3.0 standard and the DICOM Conformance Statements from GE Healthcare

and other vendors. It is the responsibility of the user (or user's agent) to assess the application requirements and to design a solution that integrates GE Healthcare equipment with equipment from other vendors.
When the comparison of this DICOM Conformance Statement with a DICOM Conformance Statement from another vendor indicates that connectivity should be possible, it is the responsibility of the user (or user's agent) to verify this by carrying out validation tests and to check whether all required functionality is met.
With regard to the future evolution of the DICOM 3.0 standard, GE Healthcare reserves the right to make changes to the EDLC architecture described in this document. The user (or user's agent) should ensure that any equipment connected via DICOM to GE Healthcare equipment also follows the future evolution of the DICOM 3.0 standard. Failure to do so may result in (partial) loss of connectivity.

1.4.2 ACKNOWLEDGEMENT OF TRADE NAMES

All trade names mentioned in this document are recognized. Edison and Datalogue are registered trademark of GE Healthcare.

1.5 IMPORTANT REMARKS

The use of these DICOM Conformance Statements, in conjunction with the DICOM Standards, is intended to facilitate communication with GE imaging equipment. However, **by itself, it is not sufficient to ensure that inter-operation will be successful**. The **user (or user's agent)** needs to proceed with caution and address at least four issues:

- **Integration** - The integration of any device into an overall system of interconnected devices goes beyond the scope of standards (DICOM v3.0), and of this introduction and associated DICOM Conformance Statements when interoperability with non-GE equipment is desired. The responsibility to analyze the applications requirements and to design a solution that integrates GE imaging equipment with non–GE systems is the **user's** responsibility and should not be underestimated. The **user** is strongly advised to ensure that such an integration analysis is correctly performed.
- **Validation** - Testing the complete range of possible interactions between any GE device and non–GE devices, before the connection is declared operational, should not be overlooked. Therefore, the **user** should ensure that any non–GE provider accepts full responsibility for all validation required for their connection with GE devices. This includes the accuracy of the image data once it has crossed the interface between the GE imaging equipment and the non–GE device and the stability of the image data for the intended applications.

  Such a validation is required before any clinical use (diagnosis and/or treatment) is performed. It applies when images acquired on GE imaging equipment are processed/displayed on a non-GE device, as well as when images acquired on non-GE equipment is processed/displayed on a GE console or workstation.
- **Future Evolution** - GE understands that the DICOM Standard will evolve to meet the user's growing requirements. GE is actively involved in the development of the DICOM Standard. DICOM will incorporate new features and technologies and GE may follow the evolution of the Standard. The GEHC protocol is based on DICOM as specified in each DICOM Conformance Statement. Evolution of the Standard may require changes to devices which have implemented DICOM. **In addition, GE reserves the right to discontinue or make changes to the support of communications features (on its products) described by these DICOM Conformance Statements**. The **user** should ensure that any non–GE provider, which connects with GE devices, also plans for the future evolution of the DICOM Standard. Failure to do so will likely result in the loss of function and/or connectivity as the DICOM Standard changes and GE Products are enhanced to support these changes.

- **Interaction** - It is the sole responsibility of the **non–GE provider** to ensure that communication with the interfaced equipment does not cause degradation of GE imaging equipment performance and/or function.

1.6 REFERENCES

TABLE 1 REFERENCES USED

Name	Description
NEMA PS3	Digital Imaging and Communications in Medicine (DICOM) Standard, available free at http://medical.nema.org/
Zero Foot Print (ZFP) Viewer DICOM Conformance Statement	DICOM Conformance Statement for the Universal Viewer Zero Footprint V6.0 available at https://www.gehealthcare.com/products/interoperability/dicom/radiology-pacs-and-ris-conformance-statements
EA DICOM Conformance Statement	DICOM Conformance Statement for Centricity Enterprise Archive 4.0 available at https://www.gehealthcare.com/products/interoperability/dicom/radiology-pacs-and-ris-conformance-statements

1.7 DEFINITIONS

Informal definitions are provided for the following terms used in this Conformance Statement. The DICOM Standard is the authoritative source for formal definitions of these terms.

Abstract Syntax – The information agreed to be exchanged between applications, generally equivalent to a Service/Object Pair (SOP) Class. Examples: Verification SOP Class, Study Root Query/Retrieve Model – FIND SOP Class, Computed Radiography Image Storage SOP Class.

Application Entity (AE) – An end point of a DICOM information exchange, including the DICOM network or media interface software; i.e., the software that sends or receives DICOM information objects or messages. A single device may have multiple Application Entities.

Application Entity Title – The externally known name of an *Application Entity*, used to identify a DICOM application to other DICOM applications on the network.

Application Context – The specification of the type of communication used between *Application Entities*. Example: DICOM network protocol.

Association – A network communication channel set up between *Application Entities*.

Attribute – A unit of information in an object definition; a data element identified by a *tag*. The information may be a complex data structure (Sequence), itself composed of lower level data elements. Examples: Patient ID (0010,0020), Accession Number (0008,0050), Photometric Interpretation (0028,0004), Procedure Code Sequence (0008,1032).

EDGE Device - designed to communicate with the hospital PACS system for query/retrieval of images and to push these images to Edison Datalogue Connect cloud.

Edison Datalogue Connect (EDLC) - a suite of on premise and cloud-based collaboration tools designed to offer advanced clinician collaboration, seamless device connectivity.

Information Object Definition (IOD) – The specified set of *Attributes* that comprise a type of data object; does not represent a specific instance of the data object, but rather a class of similar data objects that have the same properties. The *Attributes* may be specified as Mandatory (Type 1), Required but possibly unknown (Type 2), or Optional (Type 3), and there

may be conditions associated with the use of an Attribute (Types 1C and 2C). Examples: MR Image IOD, CT Image IOD, Print Job IOD.

Joint Photographic Experts Group (JPEG) – A set of standardized image compression techniques, available for use by DICOM applications.

Media Application Profile – The specification of DICOM information objects and encoding exchanged on removable media (e.g., CDs)

Media Viewer – The Media Viewer is an offline DICOM viewer for the downloaded DICOM images.

Module – A set of *Attributes* within an *Information Object Definition* that are logically related to each other. Example: Patient Module includes Patient Name, Patient ID, Patient Birth Date, and Patient Sex.

Negotiation – First phase of *Association* establishment that allows *Application Entities* to agree on the types of data to be exchanged and how that data will be encoded.

Patient case object – Collection of related items of information about a single patient, treated as a unit for purposes of input, processing, output, or storage in EDLC applications.

Presentation Context – The set of DICOM network services used over an *Association*, as negotiated between *Application Entities*; includes *Abstract Syntaxes* and *Transfer Syntaxes*.

Protocol Data Unit (PDU) – A packet (piece) of a DICOM message sent across the network. Devices must specify the maximum size packet they can receive for DICOM messages.

Query Spanning - EDLC will span the query to one or more remote Application Entities. Both the results from the local query and the remote queries will be merged and returned to the querying client.

Security Profile – A set of mechanisms, such as encryption, user authentication, or digital signatures, used by an *Application Entity* to ensure confidentiality, integrity, and/or availability of exchanged DICOM data

Service Class Provider (SCP) – Role of an *Application Entity* that provides a DICOM network service; typically, a server that performs operations requested by another *Application Entity* (*Service Class User*). Examples: Picture Archiving and Communication System (image storage SCP, and image query/retrieve SCP), Radiology Information System (modality worklist SCP).

Service Class User (SCU) – Role of an *Application Entity* that uses a DICOM network service; typically, a client. Examples: imaging modality (image storage SCU, and modality worklist SCU), imaging workstation (image query/retrieve SCU).

Service/Object Pair (SOP) Class – The specification of the network or media transfer (service) of a particular type of data (object); the fundamental unit of DICOM interoperability specification. Examples: Ultrasound Image Storage Service, Basic Grayscale Print Management.

Service/Object Pair (SOP) Instance – An information object; a specific occurrence of information exchanged in a *SOP Class*. Examples: a specific x-ray image.

Tag – A 32-bit identifier for a data element, represented as a pair of four digit hexadecimal numbers, the “group” and the “element”. If the “group” number is odd, the tag is for a private (manufacturer-specific) data element. Examples: (0010,0020) [Patient ID], (07FE,0010) [Pixel Data], (0019,0210) [private data element].

Transfer Syntax – The encoding used for exchange of DICOM information objects and messages.

Unique Identifier (UID) – A globally unique "dotted decimal" string that identifies a specific object or a class of objects; an ISO-8824 Object Identifier. Examples: Study Instance UID, SOP Class UID, SOP Instance UID.

Value Representation (VR) – The format type of an individual DICOM data element, such as text, an integer, a person's name, or a code. DICOM information objects can be transmitted with either explicit identification of the type of each data element (Explicit VR), or without explicit identification (Implicit VR); with Implicit VR, the receiving application must use a DICOM data dictionary to look up the format of each data element.

1.8 SYMBOLS AND ABBREVIATIONS

AE	Application Entity
AET	Application Entity Title
CR	Computed Radiography
CT	Computed Tomography
DHCP	Dynamic Host Configuration Protocol
DICOM	Digital Imaging and Communications in Medicine
DNS	Domain Name System
DX	Digital X-ray
EA	Enterprise Archive
EDLC	Edison Datalogue Connect
FSR	File Set Reader
GSPS	Grayscale Softcopy Presentation State
IHE	Integrating the Healthcare Enterprise
IOD	Information Object Definition
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISO	International Organization for Standards
IO	Intra-oral X-ray
JPEG	Joint Photographic Experts Group
LUT	Look-up Table
MPEG	Moving Picture Experts Group
MG	Mammography (X-ray)
MR	Magnetic Resonance Imaging
MWL	Modality Worklist
NM	Nuclear Medicine
NTP	Network Time Protocol
O	Optional (Key Attribute)
OSI	Open Systems Interconnection
PACS	Picture Archiving and Communication System
PET	Positron Emission Tomography
PDU	Protocol Data Unit
R	Required (Key Attribute)
RF	Radiofluoroscopy
RT	Radiotherapy

SC	Secondary Capture
SCP	Service Class Provider
SCU	Service Class User
SOP	Service-Object Pair
SPS	Scheduled Procedure Step
SR	Structured Reporting
TCP/IP	Transmission Control Protocol/Internet Protocol
U	Unique (Key Attribute)
UL	Upper Layer
US	Ultrasound
VL	Visible Light
VR	Value Representation
XA	X-ray Angiography
ZFP	Zero Foot Print

2. NETWORK CONFORMANCE STATEMENT

2.1 INTRODUCTION

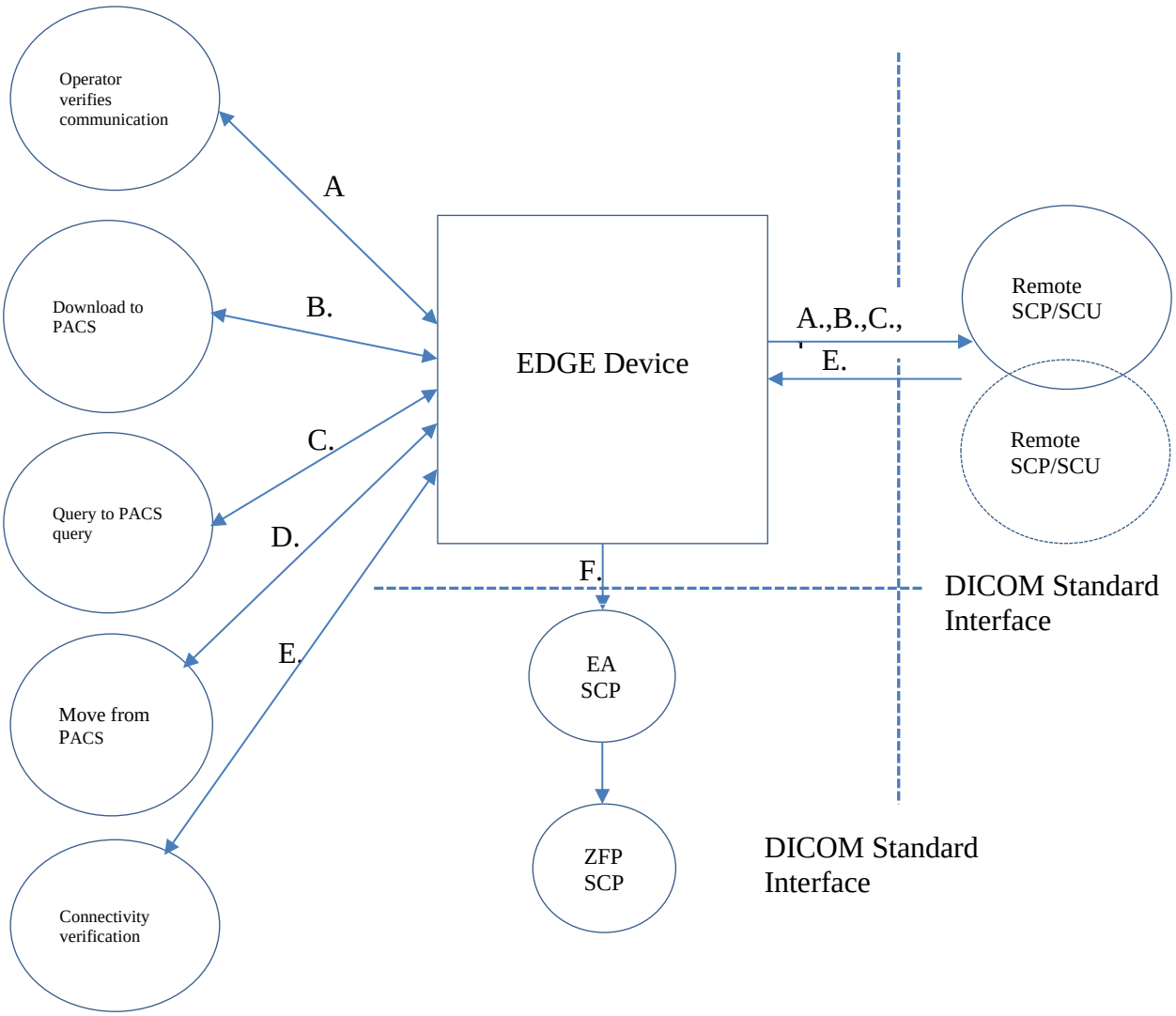
This section of the DICOM Conformance Statement specifies Edison™ Datalogue™ Connect compliance to DICOM requirements for **Networking** features.
Edison Datalogue Connect is a cloud-enabled Image exchange platform through which physicians or clinicians can use web-based application to share, view & download patient's images (DICOM) using DICOM3.0 standard protocols. This enables the server to communicate with any DICOM 3.0 compliant products (such as EA, ZFP and Media Viewer). The EDGE device acts as a DICOM Provider/Receiver, thus other stations can retrieve and send images to and from the EDGE device Images are transferred using the DICOM 3.0 protocol based on TCP/IP as a transport layer.

2.2 IMPLEMENTATION MODEL

2.2.1 Application Data Flow Diagram

The network application model for Edison™ Datalogue™ Connect is shown in the following Illustration :

FIGURE 2-1 EDISON DATALOGUE CONNECT NETWORK APPLICATION MODEL AND DATA FLOW DIAGRAM



The product supports following activities:
Activity A: Verification of a remote system connectivity.
Activity B: Sending DICOM object to a remote system.
Activity C: Performing DICOM study query.
Activity D: Generating instructions to transfer stored DICOM instances.
Activity E: Verification of EDGE device connectivity by PACS System
Activity F: Query/retrieve a DICOM in order to be displayed by ZFP or to be locally downloaded and viewed by Media Viewer. (C-FIND, C-MOVE, C-STORE)

2.2.2 Functional Definition of EDGE Device Application Entity

EDGE Device is deigned to communicate with hospital PACS system for query/retrieval of images and to push these images to Edison™ Datalogue™ Connect cloud components using

secure SSL communication. DICOM functionality mentioned in the above data flow diagram is available for the EDGE Device to interface with external PACS systems.
It is not configured to act as a traditional image archive as the intent is limited to image exchange and collaboration on the cloud.

2.2.3 Sequencing of Real-World Activities

The following scenarios relate different activities in time:

2.2.3.1 Real-World Activity – Verification of a remote system connectivity

EDGE device verifies DICOM client connectivity with a remote system. During the deployment of a new Edge Device a sanity check could be executed. This sanity check will verify the availability of the target PACS devices based on their AE Title, IP address and port number.
The connected PACS device may also be able to check the status of the EDGE device.

2.2.3.2 Real-World Activity - Sending DICOM object to a remote system

Edison™ Datalogue™ Connect supports storage of image instances to external PACS systems. The end-user can instruct the EDLC solution to move a given study from the built-in DICOM storage to the on-premise PACS device. The EDGE device will download the selected DICOM objects and store them to the target DICOM archive of the hospital.

2.2.3.3 Real-World Activity - Performing DICOM study query

The EDGE Device supports query-spanning to facilitate querying instances that are distributed over several Application Entities. If the query-spanning feature is enabled, a query performed on EDGE Device will cause to span the query to one or more remote Application Entities. Both the results from the local query and the remote queries will be merged and returned to the EDGE Device querying client.
The clinician users can start queries on multiple PACS devices, in order to find all DICOM studies which should be relevant (e.g. belongs to the same patient) to a given patient case. The EDLC backend will send the search criteria to the EDGE device. This EDGE device will run the DICOM searches on each selected Application Entity. The result of all queries will be merged and displayed in a single list. The result could be used for manual or automatic case creation. See next chapter.

2.2.3.4 Real-World Activity - Generating instructions to transfer stored DICOM instances

Edison™ Datalogue™ Connect supports retrieval of image instance from PACS and store to Enterprise Archive.
In the manual workflow, the registered clinicians can create new patient cases out of a particular DICOM study. The user will start a DICOM search on one or more Application Entities in order to list all studies match to the search criteria. The user will select one or more studies and create the case out of the patient details.
The EDLC also has an automated case creation workflow. In this case, the EDLC periodically start a query for finding the latest DICOM studies fit to the preconfigured criteria. If the query result is not empty, the EDLC will create a case out of the resulted studies.

2.2.3.5 Real-World Activity – Query/retrieve a DICOM in order to be displayed by ZFP or to be locally downloaded and viewed by Media Viewer. (C-FIND, C-MOVE, C-STORE)

The user can load a supported DICOM object (Table 4) into the ZFP for viewing integrated with Edison™ Datalogue™ Connect. The ZFP viewer is a viewing application integrated with EDLC. The ZFP viewer does not directly communicate using DICOM network protocols with external equipment; however, it does read DICOM objects from the cloud archive (EA). You can find more details in the ZFP DICOM Conformance Statement (see References).
DICOMs downloaded to local system can be viewed with Media Viewer in an offline way. You can find more details in the Media Viewer DICOM Conformance Statement (see References).
The end-users of EDLC can manually upload DICOM studies from a supported web browser. These uploaded DICOM studies can be attached to a given patient case. The EDLC solution will store the uploaded DICOM studies into the built-in DICOM archive.

2.3 AE SPECIFICATIONS

2.3.1 EDGE Device Application Entity Specification

The Edge Device Application Entity provides Standard Conformance to the following DICOM SOP Classes as an SCU and/or as an SCP:

TABLE 1 STANDARD NON-STORAGE AND NON-DISPLAY SOP CLASSES

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes
Patient Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Yes	No
Patient Root Query/Retrieve Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Yes	No
Study Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	No
Study Root Query/Retrieve Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	No
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Yes	No

The following standard storage SOP classes are supported by the EDGE Device:

TABLE 3 STANDARD STORAGE SOP CLASSES

SOP Class Name	SOP Class UID	SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
Standalone Overlay Storage (Retired)	1.2.840.10008.5.1.4.1.1.8	Yes	Yes
Standalone Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.9	Yes	Yes
Standalone Modality LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.10	Yes	Yes
Standalone VOI LUT Storage (Retired)	1.2.840.10008.5.1.4.1.1.11	Yes	Yes
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
X-Ray Angiographic Bi-plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	Yes
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	Yes
Hardcopy Grayscale Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.29	Yes	Yes
Hardcopy Color Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.30	Yes	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	Yes
Standalone Positron Emission Tomography Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	Yes
Ultrasound Multiframe Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	Yes
NM Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Yes	Yes
Basic Text SR	1.2.840.10008.5.1.4.1.1.88.11	Yes	Yes
Enhanced SR	1.2.840.10008.5.1.4.1.1.88.22	Yes	Yes
Comprehensive SR	1.2.840.10008.5.1.4.1.1.88.33	Yes	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	Yes
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	Yes
Digital Intra-Oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	Yes
Digital Intra-Oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	Yes
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Yes	Yes
Key Object Selection	1.2.840.10008.5.1.4.1.1.88.59	Yes	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	Yes
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Yes	Yes
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Yes	Yes
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Yes	Yes
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	Yes
Chest CAD SR	1.2.840.10008.5.1.4.1.1.88.65	Yes	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	Yes
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	Yes
Procedure Log	1.2.840.10008.5.1.4.1.1.88.40	Yes	Yes
VL (Visible Light) Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Yes	Yes
VL Multiframe Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Yes	Yes
Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.2	Yes	Yes
Pseudo-Color Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.3	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Blending Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.4	Yes	Yes
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	Yes	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	Yes
X-Ray Radiation Dose SR	1.2.840.10008.5.1.4.1.1.88.67	Yes	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	Yes
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Yes	Yes
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Yes	Yes
Hanging Protocol Storage	1.2.840.10008.5.1.4.38.1	Yes	Yes
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Yes	Yes
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Yes	Yes
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	Yes	Yes
Implantation Plan SR Document Storage	1.2.840.10008.5.1.4.1.1.88.70	Yes	Yes
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	Yes	Yes
RT Beams Delivery Instruction Storage Trial Retired	1.2.840.10008.5.1.4.34.1	Yes	Yes
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	Yes	Yes
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Yes	Yes
Autorefraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Yes	Yes
Ophthalmic Optical Coherence Tomography B-scan Volume Analysis Storage	1.2.840.10008.5.1.4.1.1.77.1.5.8	Yes	Yes
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Yes	Yes
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Yes	Yes
Wide Field Ophthalmic Photography 3D Coordinates Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.6	Yes	Yes
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Yes	Yes
Ophthalmic Optical Coherence Tomography En Face Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.7	Yes	Yes
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Yes	Yes
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	Yes
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Yes	Yes
Wide Field Ophthalmic Photography Stereographic Projection Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.5	Yes	Yes
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Yes	Yes
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Yes	Yes
Colon CAD SR	1.2.840.10008.5.1.4.1.1.88.69	Yes	Yes
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	Yes	Yes
Legacy Converted Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.2	Yes	Yes
Corneal Topography Map Storage	1.2.840.10008.5.1.4.1.1.82.1	Yes	Yes
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Legacy Converted Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.128.1	Yes	Yes
DICOS Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.501.2.2	Yes	Yes
DICOS Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.501.2.1	Yes	Yes
Tractography Results Storage	1.2.840.10008.5.1.4.1.1.66.6	Yes	Yes
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Yes	Yes
RT Brachy Application Setup Delivery Instruction Storage	1.2.840.10008.5.1.4.34.10	Yes	Yes
DICOS 3D AIT Storage	1.2.840.10008.5.1.4.1.1.501.5	Yes	Yes
DICOS 2D AIT Storage	1.2.840.10008.5.1.4.1.1.501.4	Yes	Yes
DICOS Threat Detection Report Storage	1.2.840.10008.5.1.4.1.1.501.3	Yes	Yes
DICOS Quadrupole Resonance (QR) Storage	1.2.840.10008.5.1.4.1.1.501.6	Yes	Yes
DICOS CT Image Storage	1.2.840.10008.5.1.4.1.1.501.1	Yes	Yes
Ophthalmic Thickness Map Storage	1.2.840.10008.5.1.4.1.1.81.1	Yes	Yes
Implant Template Group Storage	1.2.840.10008.5.1.4.45.1	Yes	Yes
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	Yes	Yes
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Yes	Yes
Basic Structured Display Storage	1.2.840.10008.5.1.4.1.1.131	Yes	Yes
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Yes	Yes
Parametric Map Storage	1.2.840.10008.5.1.4.1.1.30	Yes	Yes
Comprehensive 3D SR	1.2.840.10008.5.1.4.1.1.88.34	Yes	Yes
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	Yes	Yes
Segmented Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.10	Yes	Yes
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	Yes	Yes
Multiple Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.11	Yes	Yes
Volume Rendering Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.9	Yes	Yes
Advanced Blending Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.8	Yes	Yes
Legacy Converted Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.4	Yes	Yes
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	Yes	Yes
Compositing Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.7	Yes	Yes
Grayscale Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.6	Yes	Yes
Implant Assembly Template Storage	1.2.840.10008.5.1.4.44.1	Yes	Yes
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Yes	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Yes	Yes
Text SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.1	Yes	Yes
Audio SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.2	Yes	Yes
Detail SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	Yes	Yes
Comprehensive SR Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.4	Yes	Yes
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	Yes
Breast Projection X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	Yes	Yes
Breast Projection X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.13.1.5	Yes	Yes
CT Defined Procedure Protocol Storage	1.2.840.10008.5.1.4.1.1.200.1	Yes	Yes
CT Performed Procedure Protocol Storage	1.2.840.10008.5.1.4.1.1.200.2	Yes	Yes
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Yes	Yes
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	Yes	Yes
Surface Scan Point Cloud Storage	1.2.840.10008.5.1.4.1.1.68.2	Yes	Yes
Surface Scan Mesh Storage	1.2.840.10008.5.1.4.1.1.68.1	Yes	Yes
Content Assessment Results Storage	1.2.840.10008.5.1.4.1.1.90.1	Yes	Yes
Macular Grid Thickness and Volume Report	1.2.840.10008.5.1.4.1.1.79.1	Yes	Yes
Waveform Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.9.1	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.14.2	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.14.1	Yes	Yes
Generic Implant Template Storage	1.2.840.10008.5.1.4.43.1	Yes	Yes
Eddy Current Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.601.2	Yes	Yes
Eddy Current Image Storage	1.2.840.10008.5.1.4.1.1.601.1	Yes	Yes
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Yes	Yes
Private GE Collage Storage	1.2.528.1.1001.5.1.1.1	Yes	Yes
Private TomTec Annotation Storage	1.2.276.0.48.5.1.4.1.1.7	Yes	Yes
Private Fuji CR Image Storage	1.2.392.200036.9125.1.1.2	Yes	Yes
GE Private Detailed Detached Study Management	1.2.528.1.1001.3.1.2.3.1	Yes	Yes
Private GE PET Raw Data Storage	1.2.840.113619.4.30	Yes	Yes
GE Private Structure Display	1.2.840.113619.4.41	Yes	Yes
Private GE RT Plan Storage	1.2.840.113619.4.5.249	Yes	Yes
Private GE eNTEGRA Protocol or NM Genie Storage	1.2.840.113619.4.27	Yes	Yes
Private GE 3D Model Storage	1.2.840.113619.4.26	Yes	Yes
Private Philips HP Live 3D 01 Storage	1.2.840.113543.6.6.1.3.10001	Yes	Yes

SOP Class Name	SOP Class UID	SCU	SCP
Private Philips Specialised XA Storage	1.3.46.670589.2.3.1.1	Yes	Yes
Private Philips Volume Storage	1.3.46.670589.5.0.1.1	Yes	Yes
Private Philips MR Series Data Storage	1.3.46.670589.11.0.0.12.2	Yes	Yes
Private Philips 3D Presentation State Storage	1.3.46.670589.2.5.1.1	Yes	Yes
Private Philips HP Live 3D 02 Storage	1.2.840.113543.6.6.1.3.10002	Yes	Yes

For the displayable and non-displayable standard SOP classes supported by ZFP the Zero Foot Print (ZFP) Viewer integrated with Edison™ Datalogue™ Connect consult ZFP DCS .

For the displayable and non-displayable standard SOP classes supported by supported by the GE Media Viewer with EdisonTM DatalogueTM Connect consult GE Media Viewer DCS .

A query performed by Edison™ Datalogue™ Connect UI transfers this query to hospital PACS via local EDGE EA and returns data that is retrieved from the hospital PACS. By default, the following fields are present in the database.
Edison™ Datalogue™ Connect limits the number of query results to maximum 100 records and return successful status.
The following Query attributes are supported by the Edison™ Datalogue™ Connect:

TABLE 4 SUPPORTED ATTRIBUTES FOR QUERY

Level	Description	Tag	Types of Match
Patient	Patient Name	(0010,0010)	S, *, U
Patient	Patient ID	(0010,0020)	S, *, U
Patient	Patient Birth Date	(0010,0030)	S, U
Patient	Patient Sex	(0010,0040)	S, *, U
Study	Study Date	(0008,0020)	S, R, U
Study	Accession Number	(0008,0050)	S, *, U
Study	Study ID	(0020,0010)	S, *, U
Study	Modality in Study	(0008,0061)	S, *, U
Study	Referring Physician’s Name	(0008,0090)	S, *, U
Study	Preforming Physician’s Name	(0008,1050)	S, *, U

Table 4 ‘Types of Matching’ should be read as follows: An "S" indicates the identifier attribute can specify Single Value Matching, an “R” indicates Range Matching, an “*” denotes a wildcard matching, a ‘U’ indicates universal matching, and ‘L’ indicates that the UID lists are supported for matching.

The following Query and Return keys attributes are supported by the Edison™ Datalogue™ Connect:

TABLE 5 SUPPORTED ATTRIBUTES FOR QUERY AND RETURN KEYS

Level	Description	Tag	Query Key Type	Return Key Type	Remark/Query Type
Patient	Specific Character Set	(0008,0005)	R	NA	ISO_IR 100
Patient	Query Retrieve Level	(0008,0052)	R	NA	Set to level of query: PATIENT STUDY SERIES IMAGE
Patient	Retrieve AE Title	(0008,0054)	*	2	
Patient	Patient Name	(0010,0010)	R	2	
Patient	Patient ID	(0010,0020)	R	2	
Patient	Patient Birth Date	(0010,0030)	R	2	
Patient	Patient Sex	(0010,0040)	R	2	
Study	Number of Study related Series	(0020,1206)	*	2	
Study	Study Description	(0008,1030)	*	2	
Study	Reading Physician	(0008,1060)	*	2	
Study	Study Time	(0008,0030)	*	2	
Study	Study Date	(0008,0020)	R	2	
Study	Accession Number	(0008,0050)	R	2	
Study	Study ID	(0020,0010)	R	2	
Study	Modality in Study	(0008,0061)	R	2	
Study	Referring Physician's Name	(0008,0090)	R	2	
Study	Study Instance UID	(0020,000D)	*	1	
Study	Preforming Physician's Name	(0008,1050)	*	2	
Series	Modality	(0008,0060)	R	1	
Series	Number of Series Related Images	(0020,1209)	*	2	
Series	Series Instance UID	(0020,000E)	*	1	
Image	SOP Instance UID	(0008,0018)	*	1	

Table 5 'Matching Key Type' and 'Return Key Type' should be read as follows: An "R" indicates that these attributes are required, so user can query based on these attributes, an "*" indicates that these attributes are wildcards, so Edison™ Datalogue™ Connect supports wild card query based on these attributes and a blank is sent, a "1" indicates that value of these attributes should be returned as response of Query, a '2' indicates that these attributes are optional and

returned as response of Query if value is available. If there is no return for a particular type 1 mandatory key, then the corresponding entry is not displayed.

2.3.1.1 Association Establishment Policies

This section describes the general association establishment and acceptance policies for the EDGE Device

2.3.1.1.1 General

The DICOM Application Context Name (ACN), which is always proposed, is:

Application Context Name	**1.2.840.10008.3.1.1.1**

The user information Items sent by this product are:

- Maximum PDU length
- Implementation UID
- Implementation Version Name

The EDGE Device rejects association requests from applications of which the AE Title is not registered within EDGE Device administration unless it is configured to accept any AE Title.

2.3.1.1.2 Number of Associations

The EDGE Device AE supports multiple associations both as an SCU and SCP. EDGE Device supports following number of associations as an association initiator.

Maximum number of simultaneous associations	**4 (non-configurable) simultaneous associations to a given SCU**

EDGE Device supports following number of associations as an association initiator

Maximum number of simultaneous associations	**1000 (non-configurable)**

2.3.1.1.3 Asynchronous Nature

The implementation supports asynchronous communication (multiple outstanding transactions over a single Association)

Maximum number of outstanding asynchronous transactions	**0 (unlimited) (non-configurable)**

2.3.1.1.4 Implementation Identifying Information

The Implementation UID for this DICOM Implementation is:

Implementation Class UID	**1.2.528.1.1001.2.800.6.0.<buildnumber>**
Implementation Version Name	**EA4 <buildnumber>**

Where <buildnumber> is the EA (EDGE Device) software build number.

2.3.1.2 Association Initiation Policy

When the Edge Device Application Entity initiates an Association for any Real-World Activity, it will propose the Presentation Contexts for all Real-World Activities; i.e., there is only a single, comprehensive Presentation Context Negotiation proposed for the AE.
The Edge Device proposes only a single Transfer Syntax in each Presentation Context; i.e., for each Abstract Syntax in the following Presentation Context Tables, the AE proposes one Presentation Context for each specified Transfer Syntax.

2.3.1.2.1 Real-World Activity - Verify Connectivity

Description and Sequencing of Activities

The operator can choose to verify a remote Application Entity. The EDGE Device sends out a verification request to a remote Application Entity.

2.3.1.2.1.1 Proposed Presentation Context Table

TABLE 6 PRESENTATION CONTEXT TABLE FOR VERIFY CONNECTION

Presentation Context Table – Proposed by Edge Device for Verify Connectivity					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name List**	**UID List**		
Verification	1.2.840.10008.1.1	Implicit VR, Little Indian	1.2.840.10008.1.2	SCU	None

2.3.1.2.1.1.1 SOP Specific DICOM Conformance Statement

The EDGE Device provides standard conformance. In case of failure the verification is not retried.

2.3.1.2.2 Real-World Activity - Send Instances

Description and Sequencing of Activities

The following activities can trigger the EDGE Device to send instances to one or more remote Application Entities:

- The operator requesting the transmission of a study.

2.3.1.2.2.1 Proposed Presentation Context Table

TABLE 7 PRESENTATION CONTEXT TABLE FOR SEND INSTANCES

Presentation Context Table – Proposed by Edge Device for Send Instances					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name List**	**UID List**		
Default Application SOP Classes	See Table 3	See **Error! Reference source not found.**	See **Error! Reference source not found.**	SCU	None

TABLE 8 TRANSFER SYNTAXES FOR SEND INSTANCES

Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Explicit VR Big Endian	1.2.840.10008.1.2.2

2.3.1.2.2.1.1 SOP Specific DICOM Conformance Statement

The EDGE Device provides full (level 2) conformance. This means that upon sending an instance received via DICOM it will send out all attributes that it received (this includes private attributes from other vendors).
By default the EDGE Device proposes the transfer syntax as it is found in the stored instance file and the default transfer syntax. (Note what is referred to, as 'the default transfer' can be more than one transfer syntax. By default Explicit Little Endian and Implicit Little Endian are used as 'default transfer syntax').

TABLE 9 DICOM COMMAND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Instance is stored	0000	Operation is considered complete
Warning	Sub-operations Complete – One or more Failures	Bxxx	Error code is logged. Operation is considered complete
Failure	All failures	*	The failure is logged and the operation is retried (see send retry note)

TABLE 10 DICOM COMMAND COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the command is marked as failed. The reason will be logged and the transfer will be retried later (see send retry note)
Association aborted	The command is marked as failed. The reason will be logged and the transfer will be retried later (see send retry note)

Applicable communication parameters are listed in section **Error! Reference source not found.**

2.3.1.2.3 Real-World Activity - Span a Query

Description and Sequencing of Activities

The EDGE device can be used as a gateway for other Application Entities in the sense that queries on the EDGE Device return information on instances present in the EDGE Device *and* in the Application Entities for which the EDGE Device is used as a gateway. This is accomplished by spanning queries to remote Application Entities and returning all results to the requesting system.

2.3.1.2.3.1 Proposed Presentation Context Table

TABLE 11 PRESENTATION CONTEXT TABLE FOR SPAN A QUERY

Presentation Context Table - Accepted by Edge Device for Span a Query					
Abstract Syntax		**Transfer Syntax**		**Role**	**Extended Negotiation**
Name	**UID**	**Name List**	**UID List**		
Study Root Query / Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Explicit VR, Little Endian	1.2.840.10008.1.2.1	SCP	See Note 1. The following extended negotiation information is added to the Associate-RQ
		Implicit VR, Little Endian	1.2.840.10008.1.2		

Note 1. The following extended negotiation information is added to the Associate-RQ

Optional Name	Value
Relational-queries	1 (relational queries requested)
Date-time matching	0 (combined matching not requested)
Fuzzy semantic matching of person names	0 (fuzzy semantic matching not requested)
Time zone query adjustment	0 (time zone query adjustment not requested)

2.3.1.2.3.1.1 SOP Specific DICOM Conformance Statement

Standard conformance is provided.
When the query-spanning feature is enabled, the EDGE Device will forward queries unmodified, so it is the querying client that identifies the tags used in this request.
The EDGE Device expects the support for Retrieve AE Title and Instance Availability on the Application Entity.
If the move-forwarding feature is enabled for a remote DICOM database, the query results for that remote DICOM database will be modified such that the Retrieve AE title (0008, 0054) contains the AE title of the EDGE Device archive that is queried.
When the configured maximum number of query results is reached, the EDGE Device aborts the query by means of a C-FIND CANCEL. The EDGE Device will also send a C-FIND CANCEL when it receives such a request from the original requesting system.

TABLE 12 DICOM COMMAND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Matching is complete	0000	Operation is considered complete
Pending	Matches are continuing	FF00	Result is returned to the requesting system
	Matches are continuing – Warning that one or more Optional Keys were not supported	FF01	Result is returned to the requesting system

Warning	Sub-operations Complete – One or more Failures	B000	Operation is considered complete
Failure	All failures	*	Operation is considered complete. Error code is logged and returned to the requesting system.

TABLE 13 DICOM COMMAND COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the command is marked as failed. The reason will be logged and a failure code will be sent to the requesting system
Association aborted	The command is marked as failed. The reason will be logged and a failure code will be sent to the requesting system

Applicable communication parameters are listed in section **Error! Reference source not found.**.

2.3.1.2.4 Real-World Activity - Forward a Move

Description and Sequencing of Activities

The term move forwarding means retrieving from a remote system on request of a DICOM peer.
The EDGE Device is used as a gateway for other Application Entities in the sense that instances that are present in the other Application Entities can be retrieved as if they were stored locally in the EDGE Device.

2.3.1.2.4.1 Proposed Presentation Context Table

TABLE 14 PRESENTATION CONTEXT TABLE FOR FORWARD A MOVE

Presentation Context Table - Accepted by Edge Device for Forward a Move					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Study Root Query / Retrieve Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Explicit VR, Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR, Little Endian	1.2.840.10008.1.2		

2.3.1.2.4.1.1 SOP Specific DICOM Conformance Statement

Standard conformance is provided.
The EDGE Device will cancel a move operation when it receives a CANCEL request from the requesting system by sending a C-MOVE CANCEL.

TABLE 15 DICOM COMMAND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior

Success	Matching is complete	0000	Operation is considered complete
Pending	Matches are continuing	FF00	Result is returned to the requesting system
Warning	Sub-operations Complete – One or more Failures	B000	Operation is considered complete
Failure	All failures	*	Operation is considered complete. Error code is logged and returned to the requesting system.

TABLE 16 DICOM COMMAND COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the command is marked as failed. The reason will be logged and a failure code will be sent to the requesting system
Association aborted	The command is marked as failed. The reason will be logged and a failure code will be sent to the requesting system

Applicable communication parameters are listed in section 2.5.2.

2.3.1.3 Association Acceptance Policy

2.3.1.3.1 Real-World Activity - Receive Connectivity Verification

2.3.1.3.1.1 Associated Real-World Activity

A remote Application Entity verifies its ability to communicate with the EDGE Device by sending a verification request.

2.3.1.3.1.2 Accepted Presentation Context Table

TABLE 17 PRESENTATION CONTEXT TABLE FOR RECEIVING CONNECTIVITY VERIFICATION

Presentation Context Table - Accepted by Edge Device for Receive Connectivity Verification					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name List	UID List		
Verification	1.2.840.10008.1.1	Explicit VR, Little Endian	1.2.840.10008.1.2.1	SCP	None
		Implicit VR, Little Endian	1.2.840.10008.1.2		

2.3.1.3.1.2.1 SOP Specific DICOM Conformance Statement for all storage SOP Classes

The EDGE Device creates SOP instances from received or archived SOP instances if lossy compression has been configured.
The EDGE Device does not support the use of alternate representations.

The received IOD's must conform to the following requirements to enable the EDGE Device to archive and process the instance correctly.

- Contain study, series, and instance UIDs

2.4 COMMUNICATION PROFILES

2.4.1 Physical Network Interface

The application is indifferent to the physical medium over the underlying operating system and hardware.

2.4.1.1 DHCP

DHCP can be used to obtain TCP/IP network configuration information. Support for DHCP can be configured via the operating system. If DHCP is not in use, TCP/IP network configuration information can be manually configured.

2.4.2 IPv4 and IPv6 Support

This product supports IPv4.

2.5 EXTENSIONS / SPECIALIZATIONS/ PRIVATIZATIONS

Not applicable to this product.

2.6 CONFIGURATION

The configuration of the EDGE Device DICOM services is stored in the Windows Registry and several XML files. Only accounts (secured by passwords) with the right level of security will be able to change the configuration; support personnel will typically do this.

2.6.1 AE Title/Presentation Address Mapping

2.6.1.1 Local AE Titles

Application Entity	Default AE Title	Default TCP/IP Port
Archive	AE_<archiveName>	104

<archiveName> is the name given to a virtual archive during creation (the first 13 characters of the name are used). AE titles can be reconfigured at any time. There is only configuration for the TCP/IP Port for all AE titles.

2.6.1.2 Remote AE Title/Presentation Address Mapping

All remote systems that want to communicate with the EDGE Device Connection Service have to be configured manually. For these DICOM systems the following information is needed:

- The AE title
- The host name or IP address
- The port number (optional)

2.6.2 Parameters

The following general parameters are configurable for the EDGE Device:

TABLE 18 GENERAL CONFIGURABLE PARAMETERS

Name	Default Values	Description
Local IP address	<automatic>	IP address
Local IP netmask	<automatic>	IP netmask
Local port number	104	Listening port number for all services
Max. Number of Associations	1000	Maximum number of simultaneous accepted associations
Maximum PDU size receiving	65536	EDGE Device proposed PDU size
Maximum number of query results	500	Maximum number of query results return on a C-Find request
Maximum number of concurrent SCU associations	4	Maximum number of simultaneous initiated associations to one remote AE
Time-out waiting for acceptance or rejection Response to an Association Open Request.	00:01:00	Timeout used by EDGE Device as SCU and SCP
Time-out waiting for an Association Close Request.	00:01:00	Timeout used by EDGE Device as SCU and SCP
Request time-out	02:00:00	Timeout used by EDGE Device as SCU
Receive time-out	02:00:00	Timeout used by EDGE Device as SCP
Association operation inactivity time out	00:20:00	Timeout after which an idle association will be aborted

The following general parameters are configurable for every locally created archive

TABLE 19 CONFIGURABLE PARAMETER PER ARCHIVE

Name	Default Values	Description
Local AE Title	AE_<archive name>, per archive	Each archive has its own AE title (only the first 13 characters of the archive name are used in the default value)

The following specific parameters are configurable for every remote DICOM AE

TABLE 20 CONFIGURABLE PARAMETER PER REMOTE AE

Name	Default Values	Description
Hostname or IP Address	None	Each archive has its own AE title (only the first 13 characters of the archive name are used in the default value)

AE Title	None	Title of Application Entity
Port Number	104	Port number of Application Entity
Supported Services	Flags exist for storage, query, retrieve, verification	The set of services for which this the peer has been authorized
Query Restrictions	None	Additional query restrictions for this peer

2.7 SUPPORT OF EXTENDED CHARACTER SETS

Edison™ Datalogue™ Connect offers full support for the following character sets (possibly with code extension techniques):

TABLE 21 SUPPORTED SINGLE-BYTE CHARACTER SETS WITHOUT CODE EXTENSIONS

Character Set Description	Defined Term
Default repertoire	None
Latin alphabet No. 1	ISO_IR 100

TABLE 21.1 SUPPORTED MULTI-BYTE CHARACTER SETS WITHOUT CODE EXTENSIONS

Character Set Description	Defined Term
Unicode in UTF-8	ISO_IR 192

TABLE 21.2 SUPPORTED MULTI-BYTE CHARACTER SETS WITH CODE EXTENSIONS

Character Set Description	Defined Term
Japanese	IS0 2022 IR 87
Japanese	ISO 2022 IR 159
Japanese	ISO _IR 13

TABLE 22 EXTENDED CHARACTER SET SUPPORT

Encoding	DICOM Term in Specific Character Set (0008,0005)	Supported Languages
ASCII	Attribute is not present or ISO IR-6	English

2.8 CODES AND CONTROLLED TERMINOLOGY

The product uses no coded terminology.

2.9 SECURITY PROFILES

The product does not conform to any defined DICOM Security Profiles.
It is assumed that the product is used within a secured environment. It is assumed that a secured environment includes at a minimum:

1. Firewall or router protections to ensure that only approved external hosts have network access to the EDGE Device.
2. Firewall or router protections to ensure that the product only has network access to approved external hosts and services.

3. Any communications with external hosts and services outside the locally secured environment use appropriate secure network channels (such as a Virtual Private Network (VPN))

2.9.1 Audit Trail Message Format Profile

The EDGE Device generates the Audit Trail Message for internal logging purposes. External systems cannot connect to the EDGE Device to get ATNA logs. They can reach out to the System administrator for specific ATNA logs.

3. MEDIA STORAGE CONFORMANCE STATEMENT

3.1 INTRODUCTION

This section of the DICOM conformance statement specifies the Edison™ Datalogue™ Connect compliance to DICOM requirements for Media Interchange. It details the DICOM Media Storage Application Profiles and roles that are supported by this product.

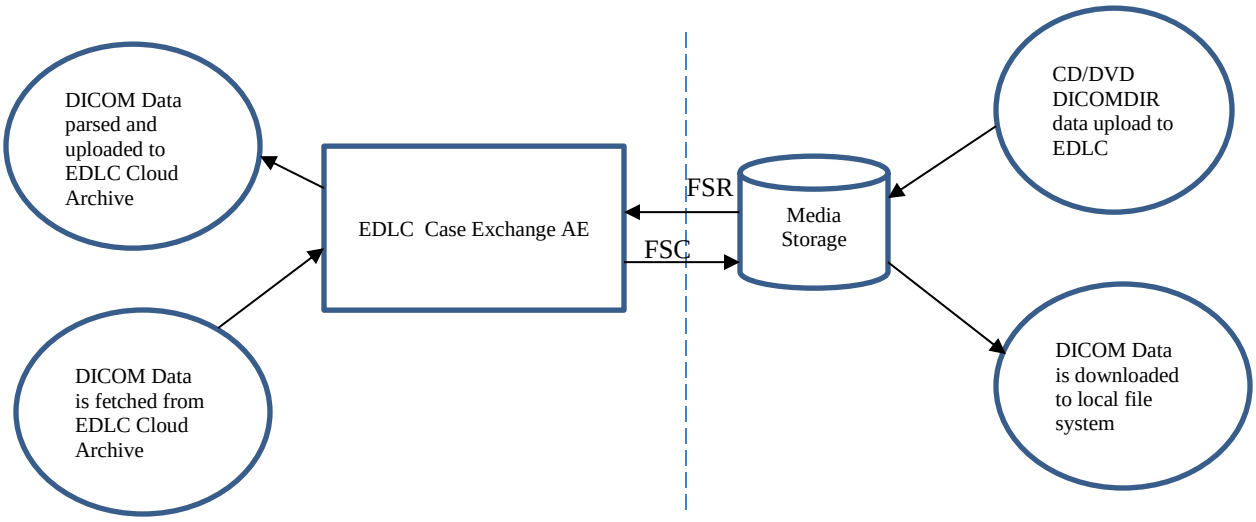
Edison™ Datalogue™ Connect allows healthcare providers to upload data from DICOM media or download DICOM to local file system.

3.2 IMPLEMENTATION MODEL

3.2.1 Application Data Flow Diagram

The media interchange application model for Edison™ Datalogue™ Connect Media Storage is shown in the following Illustration :

FIGURE 5 MEDIA INTERCHANGE APPLICATION MODEL AND DATA FLOW DIAGRAM (UPLOAD AND DOWNLOAD)


DICOM Data parsed and uploaded to EDLC Cloud Archive
DICOM Data is fetched from EDLC Cloud Archive
EDLC Case Exchange AE
FSR
FSC
Media Storage
CD/DVD DICOMDIR data upload to EDLC
DICOM Data is downloaded to local file system

3.2.2 Function Definitions of AE's

There is only one Application entity in EDLC for the Media Interchange functionality.

3.2.3 Sequencing of Real-Word Activities

User can create patient case object within the Case Exchange application using CD/DVD by accessing Edison™ Datalogue™ product and can download to the local system DICOMs belonging to a case patient object.

3.2.4 File Meta Information Options

The File Meta-Information for this implementation is :

File Meta-Information Version	1
Implementation UID	1.2.840.113619.6.311
Implementation Version Name	XJT_4.2.9

3.3 AE SPECIFICATIONS

3.3.1

The Case Exchange Application Entity provides standard conformance to DICOM Interchange Option of the Media Storage Service Class. The supported Application Profiles and roles are listed below

DICOMDIR Formats

Edison™ Datalogue™ Connect supports the following types of DICOMDIR

Supported Application Profiles	Real World Activity	Role	Option
General Purpose CD-R Interchange (STD-GEN-CD)	Data Upload to Edison™ Datalogue™ Connect using CD	FSR	Interchange
General Purpose Interchange on DVD-RAM Media (STD-GEN-DVD-RAM)	Data Upload to Edison™ Datalogue™ Connect using DVD	FSR	Interchange
General Purpose DVD with Compression Interchange (STD-GEN-DVD-JPEG/J2K)	Data Upload to Edison™ Datalogue™ Connect using DVD	FSR	Interchange
General Purpose CD-R Interchange (STD-GEN-CD)	Data Download to Edison™ Datalogue™ Connect using CD	FSC	Interchange

File Meta Information for the Case Exchange Application Entity
Following are the values set in the File Meta Information for this AE Title :

Source Application Entity Title	AETAP_SESSION
Implementation UID	1.2.840.113619.6.311
Implementation Version Name	XJT_4.2.9

3.3.1.1 Real-World Activities for the Case Exchange Application Entity

3.3.1.1.1 Real-World Activity of Data Upload to Edison™ Datalogue™ Connect using CD/DVD

Edison™ Datalogue™ Connect supports reading of DICOMDIR structure from CD/DVD as File Set Reader (FSR) and display list of patients from DICOMDIR. It also support selection of specific patient and retrieve images from CD/DVD

media and upload to Edison™ Datalogue™ Connect EA Cloud archive. Once data is successfully uploaded to cloud, user can release the CD/DVD media.

3.3.1.1.2 Real-World Activity of Data Download from Edison™ Datalogue™ Connect cloud to Local file system

Edison™ Datalogue™ Connect supports writing of DICOMDIR structure as File Set Creator (FSC). It support the selection of specific patient and retrieve images from the cloud archive and download it to local file system.

4. DATA IMPORT INFORMATION OBJECT IMPLEMENTATION

4.1 INTRODUCTION

This section specifies the use of the DICOM Data Import IOD to represent the information included in Data Import object received by this implementation. Corresponding attributes are conveyed using the module construct.

To migrate the data from one source to another and to ensure correct data is being imported into the PACS, normalization of metadata attributes option is provided by Edison™ Datalogue™ Connect.

4.2 EDISON™ DATALOGUE™ CONNECT MAPPING OF DICOM ENTITIES

The EdisonTM DatalogueTM Connect maps DICOM Information Entities to local Information Entities in the product's database and user interface.

TABLE 4-1
MAPPING OF DICOM ENTITIES TO EDISON™ DATALOGUE™ CONNECT ENTITIES

DICOM IE	Edison™ Datalogue™ Connect Entity
Patient	Case Patient
Study	Case Attachment

Series	Series
Image	Image

4.3 IOD MODULE TABLE

The Data Import Information Object Definition comprises the modules of the following table, plus Standard Extended and Private attributes. Standard Extended and Private attributes are described in Section 4.5

TABLE 4-2
DATA IMPORT IOD MODULES

Entity Name	Module Name	Usage	Reference
Patient	Patient	Used	
	Clinical Trial Subject	Not Used	N/A
Study	General Study	Used	
	Patient Study	Used	
	Clinical Trial Study	Not Used	N/A
Series	General Series	Used	
	Clinical Trial Series	Not Used	N/A
Equipment	General Equipment	Not Used	N/A
Image	General Image	Not Used	N/A
	Image Pixel	Not Used	N/A
	Contrast/Bolus	Not Used	N/A
	Display Shutter	Not Used	N/A
	Device	Not Used	N/A
	Overlay Plane	Not Used	N/A
	Modality LUT	Not Used	N/A
	VOI LUT	Not Used	N/A
	SOP Common	Not Used	N/A

4.4 INFORMATION MODULES

Please refer to DICOM Part 3 (Information Object Definitions) for a description of each of the entities, modules, and attributes contained within the Data Import Information Object.
The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes expected. Type 1 & Type 2 Attributes are also included for completeness and to define what are the expected values when loading such instance. It should be noted that they are the same ones as defined in the DICOM Standard Part 3 (Information Object Definitions). Also note that Attributes not present in tables are not supported.

4.4.1 Patient Entity Modules

4.4.1.1 Patient Module

TABLE 4-3
PATIENT MODULE ATTRIBUTES

Attribute Name	Tag	Type	Attribute Description
Patient's Name	(0010,0010)	2	Used for filling case patient's demographic data in Case Exchange. The EDLC extracts the first name and last name. Each pieces of the name is stored in a 128-character long string field of the database.
Patient ID	(0010,0020)	2	Used for filling case patient's demographic data in Case Exchange. The extracted patient ID is stored in a 64-character long database field.
Issuer of Patient ID	(0010,0021)	3	Not Used
Patient's Birth Date	(0010,0030)	2	Used for filling case patient's demographic data in Case Exchange. This value is stored in a JSON structure in format YYYYMMDD.
Patient's Sex	(0010,0040)	2	Used for filling case patient's demographic data in Case Exchange. This value is stored in a JSON structure. The accepted values are: 'F', 'M', 'O'.
Referenced Patient Sequence	(0008,1120)	3	Not Used
>Include 'SOP Instance Reference Macro'			
Patient's Birth Time	(0010,0032)	3	Not Used
Other Patient IDs	(0010,1000)	3	Not Used
Other Patient IDs Sequence	(0010,1002)	3	Not Used
>Patient ID	(0010,0020)	1	Not Used
>Issuer of Patient ID	(0010,0021)	1	Not Used
>Type of Patient ID	(0010,0022)	1	Not Used
Other Patient Names	(0010,1001)	3	Not Used
Ethnic Group	(0010,2160)	3	Not Used
Patient Comments	(0010,4000)	3	Not Used
Patient Species Description	(0010,2201)	1C	Not Used
Patient Species Code Sequence	(0010,2202)	1C	Not Used
>Include 'Code Sequence Macro'			
Patient Breed Description	(0010,2292)	2C	Not Used
Patient Breed Code Sequence	(0010,2293)	2C	Not Used
>Include 'Code Sequence Macro'			
Breed Registration Sequence	(0010,2294)	2C	Not Used
>Breed Registration Number	(0010,2295)	1	Not Used
>Breed Registry Code Sequence	(0010,2296)	1	Not Used
>>Include 'Code Sequence Macro'			

Responsible Person	(0010,2297)	2C	Not Used
Responsible Person Role	(0010,2298)	1C	Not Used
Responsible Organization	(0010,2299)	2C	Not Used
Patient Identity Removed	(0012,0062)	3	Not Used
De-identification Method	(0012,0063)	1C	Not Used
De-identification Method Code Sequence	(0012,0064)	1C	Not Used
>Include 'Code Sequence Macro'			

Attributes Name	Group Element	Mapping to HL7 Field
Patient Name	0010,0010	PID5
Patient ID	0010,0020	PID3
Patient Gender	0010,0030	PID8
Patient DOB	0010,0040	PID7

4.4.2 Study Entity Modules

4.4.2.1 General Study Module

Attribute Name	Tag	Type	Attribute Description
Study Instance UID	(0020,000D)	1	Used for filling case attachment details in Case Exchange. This value is stored in a JSON structure in DICOM UID format.
Study Date	(0008,0020)	2	Used for filling case attachment details in Case Exchange. This value is stored in a JSON structure in YYYYMMDD format.
Study Time	(0008,0030)	2	Not Used
Referring Physician's Name	(0008,0090)	2	Not Used
Referring Physician Identification Sequence	(0008,0096)	3	Not Used
>Include 'Person Identification Macro'			
Study ID	(0020,0010)	2	Used for filling case attachment details in Case Exchange. This value is stored in a JSON structure in text format.
Accession Number	(0008,0050)	2	Used for filling case attachment details in Case Exchange. This value is stored in a JSON structure in text format.
Study Description	(0008,1030)	3	Used for filling case attachment details in Case Exchange. This value is stored in a JSON structure in text format.
Physician(s) of Record	(0008,1048)	3	Not Used
Physician(s) of Record Identification Sequence	(0008,1049)	3	Not Used
>Include 'Person Identification Macro'			
Name of Physician(s) Reading Study	(0008,1060)	3	Not Used
Physician(s) Reading Study Identification Sequence	(0008,1062)	3	Not Used
>Include 'Person Identification Macro'			
Referenced Study Sequence	(0008,1110)	3	Not Used
>Include 'SOP Instance Reference Macro'			
Procedure Code Sequence	(0008,1032)	3	Not Used
>Include 'Code Sequence Macro'			

4.4.2.2 Patient Study Module

Attribute Name	Tag	Type	Attribute Description
Admitting Diagnoses Description	(0008,1080)	3	Not Used
Admitting Diagnoses Code Sequence	(0008,1084)	3	Not Used
>Include 'Code Sequence Macro'			
Patient's Age	(0010,1010)	3	Not Used
Patient's Size	(0010,1020)	3	Not Used
Patient's Weight	(0010,1030)	3	Not Used
Occupation	(0010,2180)	3	Not Used
Additional Patient's History	(0010,21B0)	3	Not Used
Admission ID	(0038,0010)	3	Not Used
Issuer of Admission ID	(0038,0011)	3	Not Used
Service Episode ID	(0038,0060)	3	Not Used
Issuer of Service Episode ID	(0038,0061)	3	Not Used
Service Episode Description	(0038,0062)	3	Not Used
Patient's Sex Neutered	(0010,2203)	2C	Not Used

4.4.3 Series Entity Modules

4.4.3.1 General Series Module

Attribute Name	Tag	Type	Attribute Description
Modality	(0008,0060)	1	Fill the case attachment details with the list of embedded modalities of the DICOM study. The 2-letter abbreviations (e.g. MR, CT, etc.) are stored in a database table in a JSON field.
Series Instance UID	(0020,000E)	1	Fill the case attachment details with the Series Instance UIDs of the embedded series of the DICOM study. The values are stored in a database table in a JSON field using DICOM UID format.
Series Number	(0020,0011)	2	Not Used
Laterality	(0020,0060)	2C	Not Used
Series Date	(0008,0021)	3	Not Used
Series Time	(0008,0031)	3	Not Used
Performing Physicians' Name	(0008,1050)	3	Not Used
Performing Physician Identification Sequence	(0008,1052)	3	
>Include 'Person Identification Macro'			

Protocol Name	(0018,1030)	3	Not Used
Series Description	(0008,103E)	3	Not Used
Operators' Name	(0008,1070)	3	Not Used
Operator Identification Sequence	(0008,1072)	3	
>Include 'Person Identification Macro'			
Referenced Performed Procedure Step Sequence	(0008,1111)	3	Not Used
>Include 'SOP Instance Reference Macro'			
Related Series Sequence	(0008,1250)	3	
>Study Instance UID	(0020,000D)	1	
>Series Instance UID	(0020,000E)	1	
>Purpose of Reference Code Sequence	(0040,A170)	2	
>>Include 'Code Sequence Macro'			
Body Part Examined	(0018,0015)	3	Not Used
Patient Position	(0018,5100)	2C	Not Used
Smallest Pixel Value in Series	(0028,0108)	3	Not Used
Largest Pixel Value in Series	(0028,0109)	3	Not Used
Request Attributes Sequence	(0040,0275)	3	Not Used
>Requested Procedure ID	(0040,1001)	1C	
>Accession Number	(0008,0050)	3	
>Study Instance UID	(0020,000D)	3	
>Referenced Study Sequence	(0008,1110)	3	
>> Include 'SOP Instance Reference Macro'			
>Requested Procedure Description	(0032,1060)	3	
>Requested Procedure Code Sequence	(0032,1064)	3	
>>Include 'Code Sequence Macro'			
Reason for the Requested Procedure	(0040,1002)	3	
Reason for Requested Procedure Code Sequence	(0040,100A)	3	
>>Include' Code Sequence Macro'			
>Scheduled Procedure Step ID	(0040,0009)	1C	
>Scheduled Procedure Step Description	(0040,0007)	3	
>Scheduled Protocol Code Sequence	(0040,0008)	3	
>>Include 'Code Sequence Macro'			
>>Protocol Context Sequence	(0040,0440)	3	
>>>Include 'Content Item Macro'			
>>>Content Item Modifier Sequence	(0040,0441)	3	
>>>>Include 'Content Item Macro'			

Performed Procedure Step ID	(0040,0253)	3	
Performed Procedure Step Start Date	(0040,0244)	3	
Performed Procedure Step Start Time	(0040,0245)	3	
Performed Procedure Step Description	(0040,0254)	3	
Performed Protocol Code Sequence	(0040,0260)	3	
>Include 'Code Sequence Macro'			
>>Protocol Context Sequence	(0040,0440)	3	
>>>Include 'Content Item Macro'			
>>>Content Item Modifier Sequence	(0040,0441)	3	
>>>>Include 'Content Item Macro'			
Comments on the Performed Procedure Step	(0040,0280)	3	

4.4.4 Equipment Entity Modules

Not applicable for this product.

4.4.5 Image Entity Modules

Copied from original IOD.

4.5 STANDARD EXTENDED AND PRIVATE DATA ATTRIBUTES

Copied from original IOD.

4.6 STANDARD EXTENDED AND PRIVATE CONTEXT GROUPS

Copied from original IOD.